

**What is claimed is:**

1. A system for implementing a virtual solar cell, comprising:

5 a data detector including a measurement sensor and adapted to collect external environment data;

a controller for receiving real-time data from the data detector, classifying the received data in a predetermined format to transmit the classified data to a data logging unit, 10 generating a voltage-current model having the same effect as that of an actual solar cell on the basis of the received data, and generating a pulse width modulation signal for controlling a power converter according to the model;

15 the power converter for converting input power in response to the pulse width modulation signal to provide power to a load; and

the data logging unit for communicating with the controller or the data detector according to a predetermined communication method, and storing data received from the controller or the data 20 detector.

2. The system for implementing a virtual solar cell as claimed in claim 1, wherein the data detector further includes a unit cell solar battery.

3. The system for implementing a virtual solar cell as claimed in claim 1, wherein the measurement sensor includes at least one of a temperature sensor, insolation sensor or wind  
5 velocity sensor.

4. The system for implementing a virtual solar cell as claimed in claim 1, wherein the data logging unit classifies data by time, place and solar cell manufacturers to store the data.  
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5. The system for implementing a virtual solar cell as claimed in claim 1, wherein the controller generates the voltage-current model on the basis of the real-time data received from the data detector or previously stored data received from the  
15 data logging unit.

6. A method for implementing a virtual solar cell, comprising:

allowing a controller to receive data from the outside;

20 classifying the received data in a predetermined format or stores it;

generating a voltage-current model for obtaining output characteristic of an actual solar cell on the basis of the received data;

performing current control according to the generated model;  
generating a pulse width modulation signal according to a  
result of the current control; and

controlling a power converter in response to the pulse width  
5 modulation signal.

7. The method for implementing a virtual solar cell as  
claimed in claim 6, wherein the data received by the controller  
includes at least one of temperature data, insolation data and  
10 output characteristic data of a unit solar cell.

8. The method for implementing a virtual solar cell as  
claimed in claim 6, wherein, in the step of classifying or  
storing the data, the data is classified by at least one of time,  
15 place and solar cell manufacturer and stored.

9. The method for implementing a virtual solar cell as  
claimed in claim 6, wherein in the step of generating the  
voltage-current model, the controller generates the voltage-  
20 current model on the basis of real-time data received from a data  
detector or arbitrary data inputted by a user through a  
predetermined method.

10. The method for implementing a virtual solar cell as claimed in claim 9, wherein the predetermined method is a method of inputting data through a user interface screen.

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